



**Minutes of the Faculty Council  
Meeting of October 31, 2018  
Michael E. Charles Council Chamber (GB 202)**

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**PRESENT:** Doug Reeve (Speaker), Grant Allen, Cristina Amon (Dean), Jason Anderson, Raunaq Bagch, Joe Baptista, Jason Bazylak, J. Christopher Beck, Evan Bentz, Chris Bouwmeester, Markus Bussmann, Warren Chan, Samantha Cheung, Karen Chu, Tom Coyle, Chris Damaren, Sonali Dey, Khuong Doan, Natalie Enright Jerger, Michael Garton, Peter Herman, Ali Hooshyar, R. Douglas Hooton, David James, Elias Kyriacou, Patrick Lee, Claudia Lutfallah, Don MacMillan, Paul Malozewski, Elham Marzi, Brenda McCabe, Mahyar Mozaffari, Farid Najm, Shivani Nathoo, Jun Nogami, Alison Olechowski, Jeffrey Packer, David Philpott, Nelly Pietropaolo, Daniel Posen, Mohsen Rahmani, Jonathan Rocheleau, Lisa Romkey, Ronauq Sabharwal, Shoshanna Saxe, Patricia Sheridan, David Sinton, Brent Sleep, Micah Stickel, Kenneth Tallman, Mindy Thuna, Deborah Tihanyi, Hamid Timorabadi, Chirag Variawa, Shankeran (Eran) Vijayakumar, Alvin Virya, Peter Weiss, Victor Xin, Mitchell Zak, Matthew Zhang, Yu Zou

**REGRETS:** Teodora Dechev, Greg Evans, Ramin Farnood, Zahir Firoze, Frank Gu, Krisztina Harmath, Vladimiro Papangelakis, Simonne Varel, Steve Waslander

**GUESTS:** Helen Bright, Sharon Brown, Chris Brown, Mikhail Burke, Emzhei Chen, Dani Couture, Chinmayee Gidwani, Leslie Grife, Cori Hanson, Catherine Riddell, Cindy Rottman, Alex Tichine, Sandy Walker, Caroline Ziegler (Secretary)

**1. Speaker's Welcome and Adoption of the Agenda**

Council Speaker Doug Reeve welcomed members to Faculty Council and acknowledged the university's use of traditional land. As this was the first meeting of the 2018-2019 academic year, he invited those present to rise by constituency group and introduce themselves.

The agenda and documents were distributed on October 17, 2018. On a motion duly moved, seconded and carried, it was resolved –

THAT the agenda be adopted.

**2. Introduction of New Faculty Members**

The following new faculty members were introduced by their chair or director and welcomed to Council: Michael Garton of IBBME, Ali Hooshyar of ECE, Patrick Lee of MIE, and Steve Waslander of UTIAS. Professor Doug Reeve introduced Emily Moore on behalf of the director of ISTEP, who could not be at the meeting.

Alison Olechowski, jointly appointed to MIE and ISTEP, was acknowledged for her July 2018 appointment to an interdisciplinary tenure-stream position. Professor Olechowski was initially hired in July 2017 as an Assistant Professor, Teaching Stream in these same units.

### **3. Adoption of the Minutes of Previous Meeting**

No errors or omissions were noted in the minutes of the previous meeting, and on a regular motion duly moved, seconded and carried, it was resolved –

THAT the minutes of the meeting of April 11, 2018 be approved.

### **4. Memorial Tributes**

At the request of an alumni member of Council, the Speaker acknowledged the June 2018 passing of Physics Professor Emeritus Don Ivey, who taught in Engineering Science for many years.

#### **(a) William Douglas Baines**

Professor Emeritus David James of the Department of Mechanical & Industrial Engineering, read the following memorial tribute.

Be it resolved –

THAT the Council of the Faculty of Applied Science & Engineering record with deep regret the death on August 28, 2018 of Professor Emeritus William Douglas Baines.

William Douglas Baines was born on February 11, 1926 in Edmonton, and he was raised in that city. Doug, as he was always known, went to the University of Alberta and took Engineering Physics. On graduation in 1947, he was the top student, winning the Gold Medal in Engineering. For postgraduate studies, he chose hydraulics and so went to the University of Iowa because of its renowned Hydraulics Laboratory, headed by the eminent Hunter Rouse, arguably the best hydraulics expert in academia at that time. Rouse was Doug's PhD supervisor, and Doug graduated in three years.

From Iowa, he went to Michigan State but stayed only one year because he did not enjoy teaching. He joined the Hydraulics Division of the National Research Council in Ottawa, and in three years became Head of the Division. At NRC, he became famous because of the Ripple Rock in the Campbell River basin in BC. This gigantic submerged rock had claimed many vessels and 114 lives. Doug's solution was to dynamite the granite obstruction, and he did so with 1300 tons of TNT. The event was so spectacular it was broadcast live on TV, and is still claimed to be the largest non-nuclear explosion in history.

He came to the University of Toronto in 1959, joining the Department of Mechanical Engineering. Hydraulics is normally in Civil Engineering, but that field had been well established in Mechanical, starting at its inception. Indeed, when the present Mechanical Building was erected in 1947, the Hydraulics Laboratory occupied the entire basement. To maintain strength in this field, the Head

of the Department, Dr. Ross Lord, also an expert in hydraulics, recruited Doug, despite Doug's vow to "never teach again".

Doug became leader of the dominant fluids group in the Department. Because of his leadership, he succeeded Dr. Lord when the latter retired in 1971. Doug was appointed Chairman, because Heads had become passé. He administered adroitly in his characteristic low-profile way. In research, Doug investigated flows of liquids having different densities. The most common words in the titles of his papers are buoyancy, gravity, turbulence and thermal. His research was fundamental and so he was well known internationally, resulting in invitations to spend time at major universities, including Cambridge and Grenoble.

On retirement, Doug turned his broad interests and intellect to, among other things, art classes, hiking, investing and beer tasting.

So what was Doug like? Obviously very bright, he was softly spoken and friendly, with a fine sense of humour. He enjoyed a good conversation, but disliked verbosity and what was not genuine. He had little patience for fools or foolishness. Perhaps his most singular trait was his ability to size up an individual or a situation, positively or otherwise, in a few choice words.

In summary, he was a superb engineer and an academic with high standards, and so he brought honour to our Faculty.

Be it further resolved –

THAT this tribute to Professor Emeritus William Douglas Baines be inscribed in the minutes of this Council meeting, and that copies be sent to his family as an expression of the respect and gratitude of the members of this Council.

**(b) Eli Robinsky**

Professor Brent Sleep of the Department of Civil and Mineral Engineering, read the following memorial tribute.

Be it resolved –

THAT the Council of the Faculty of Applied Science & Engineering record with deep regret the death on August 2, 2018 of Professor Emeritus Eli Robinsky.

Professor Emeritus Robinsky grew up in Lebanon, where he graduated from the American University of Beirut with a BA and BSc in Civil Engineering. He went on to receive his MSc in Civil Engineering from Harvard University.

Upon receiving a Doctorate in Civil Engineering from the University of Toronto in 1963, he joined the Department of Civil Engineering, remaining on staff until his retirement at 1992. He taught for

29 years, lecturing to first-year students and using contemporary civil engineering projects as case studies with his fourth-year students. He was honoured to be named Professor of the Year twice by his students.

Professor Emeritus Robinsky received many prestigious awards over his successful career, including the 1975 Arthur M. Wellington prize for the American Society of Civil Engineers, and the 1976 Leonard Medal from the Engineering Institute of Canada for a paper introducing an environmentally superior approach for the disposal of mine tailings.

Professor Emeritus Robinsky was one of several U of T faculty members hired to consult on the construction of Toronto's CN Tower. In 1972, he performed the soil and foundational analysis to ensure the tower could sit safely at its location. To complete this analysis, Professor Emeritus Robinsky bravely descended down a 30-inch wide, 117-foot deep caisson. Because of this, he is considered by some as the "unsung hero of the CN Tower project" for endangering his life to benefit the tower's ultimate safety.

Eli Robinsky leaves behind his loving wife, Marisha; daughters, Lisa (Randy) and Susie (Chris); sister, Tanya; stepson, Chris (Sharon); nephews and nieces, Kathy (John), Rurik (Roberta), Paul, Mary and Nick; grandchildren, Ava and Aidan; and grandnephews, Jamie and Christopher.

Be it further resolved –

THAT this tribute to Professor Emeritus Eli Robinsky be inscribed in the minutes of this Council meeting, and that copies be sent to his family as an expression of the respect and gratitude of the members of this Council.

**(c) Joseph Schwaighofer**

Professor Brent Sleep of the Department of Civil and Mineral Engineering, read the following memorial tribute.

Be it resolved –

THAT the Council of the Faculty of Applied Science & Engineering record with deep regret the death on October 6, 2018 of Professor Emeritus Joseph Schwaighofer.

Born in Salzburg, Austria in the early 1920s, Professor Emeritus Schwaighofer was conscripted to the Austrian army during WWII. He was captured and spent the remainder of the war as a POW working on farms in the southern United States. After the war, he finished his engineering degree (Dipl.-Ing.) in Austria and emigrated to Canada.

His career in academia began as a teaching assistant at the University of Toronto through the early 1950s, where he developed a strong interest in photo elasticity and its applications for structural engineering. Professor Emeritus Schwaighofer completed his Masters and Doctoral degrees on that subject at Pennsylvania State University. He began working at the University of Toronto in 1960 as an Assistant Professor and quickly progressed through the ranks to full professor by 1970.

Professor Emeritus Schwaighofer's research, building scale models of buildings in a photo elastic medium and testing them in three dimensions to identify weak points, influenced the design of many of the buildings constructed in Toronto at the time.

Professor Emeritus Schwaighofer is remembered as a connector and someone who was able to get large projects approved and off the ground. He was a key player in the instrumenting of Toronto's CN Tower by the University of Toronto Civil Engineering Department to study the effects of wind loads on tall buildings. He also bridged the gap between engineers and architects, lecturing at the Faculty of Architecture and giving those students an appreciation for the structural elements of design.

He was known as being a great teacher, winning Professor of the Year awards numerous times. He was also kind and supportive of new younger staff members, often taking them to the Austrian Club for schnitzel.

Professor Emeritus Schwaighofer was fond of the outdoors, particularly skiing. He was very active until a few months before his passing. He is survived by his loving wife of 42 years, Theresa Schwaighofer.

Be it further resolved –

THAT this tribute to Professor Emeritus Joseph Schwaighofer be inscribed in the minutes of this Council meeting, and that copies be sent to his family as an expression of the respect and gratitude of the members of this Council.

The Speaker assumed concurrence with these resolutions, and Council stood to observe one minute of silence in honour of Professors Emeriti William Douglas Baines, Ira Robinsky and Joseph Schwaighofer.

**5. Business Arising from the Meeting of April 11, 2018: Appointments to Faculty Standing Committees and the Academic Appeals Board, 2018-2019**

The Speaker presented Report 3601, an update on the 2018-2019 appointments to the Faculty's standing committees and Academic Appeals Board since the first presentation of the report at the April 11, 2018 Council meeting.

There were no questions and the updated report was received for information.

**6. Report of the Dean**

Dean Amon welcomed members to Faculty Council and provided the following report.

**(a) Myhal Centre for Engineering Innovation & Entrepreneurship**

The academic year began on a strong note with an open house celebrating the Myhal Centre for Engineering Innovation & Entrepreneurship on September 13, 2018. The Myhal Centre is now in

full use, and has already attracted a significant amount of interest through the media and word-of-mouth.

We have had to contend with a few challenges, such as a flooded elevator shaft that resulted in a series of operational failures and inconvenience for occupants and visitors, and these issues are being resolved. We have hired three staff members to service the Myhal Centre.

We received helpful feedback from students at the October 10, 2018 Dean's town hall, co-hosted with the Engineering Society, regarding their learning experiences in the new TEAL facilities. These suggestions will help shape ongoing refinements to the Myhal Centre. Council members were also invited to suggest improvements that will help us optimize the building.

#### **(b) Canadian Engineering Accreditation Board (CEAB) Visit**

The CEAB accreditation visit took place on October 21-23, 2018. Our general consensus is that the visit went very well and we anticipate that all nine of our undergraduate programs will be accredited for the maximum six years.

During their exit meeting, the visiting team expressed concerns with the lack of consistency across our Faculty regarding health and safety in our undergraduate laboratories, and the university's approach to centralized course scheduling, which is not working well for us. We are now taking this matter forward for discussion with the appropriate offices within the university's central administration.

We expect to receive the visiting team's report in approximately one month, and will have an opportunity to articulate how we will address these and any other concerns raised. The report and our comments will be submitted to the Accreditation Board, who will provide their accreditation decisions regarding each of our programs in the summer. We will share information as it becomes available, and will use the CEAB assessment to continuously improve our undergraduate programs.

We are grateful to Professors Tom Coyle, Vice-Dean, Undergraduate, and Evan Bentz, chair of the Faculty's Undergraduate Curriculum Committee, for their leadership in coordinating our Faculty-wide CEAB review process, and to our chairs and directors and all faculty and staff involved for their hard work and dedication throughout this immense undertaking.

#### **(c) Electrical & Computer Engineering Department Review and Chair Search**

The Edward S. Rogers Sr. Department of Electrical & Computer Engineering underwent an external review on June 18-19, 2018, and the report of the review team was received in August. An advisory committee to recommend the selection of a chair was appointed in September, and committee members are now engaging in consultations with all stakeholder groups within the ECE community.

#### **(d) Annual Report of Performance Indicators, 2017-2018**

Our tenth Annual Report of Performance Indicators was published on the Faculty website in August 2018, and print copies are now available. The report summarizes the many achievements of our Faculty during the past year, and provides a number of metrics and statistics detailing our progress over the past decade.

In particular, we have made notable progress in our commitment to diversity, including gender and ethnic diversity of our domestic and international students. We are proud to have taken steps to foster a respectful environment that is inspiring, thoughtful and truly inclusive of people of all backgrounds and abilities. The Engineering Equity, Diversity and Inclusion Action Group will update Council later this afternoon.

Also described in the Annual Report, women have comprised more than 40 percent of our incoming undergraduate cohort in the current and past two admission cycles, the highest proportion of any Canadian engineering school. Our proportion of women professors has more than doubled over the last decade and is now the highest of any engineering Faculty among the U15 Canadian research-intensive universities. In addition, more than one-third of our Canada Research Chairs are women.

In response to a question regarding the increase to 40 percent women in our incoming undergraduate cohort, Dean Amon explained that we are experiencing an increase in the number of women applicants that is greater than the growth of the overall applicant pool. However, this is mostly also due to other factors: the large percentage of high end marks that can be attributed to women applicants; our practice of matching the expectations of high schools regarding achievement in math and science; our broad-based admission; our pre-university outreach programs such as DEEP; and the tremendous efforts we make to recruit women applicants. To this end, we host the GLEE annual event, we visit high schools with the Engineering Society and Women in Science and Engineering (WISE) to seed the idea among young women that engineering can be an exciting option for them.

Thank you to all involved in outreach, recruitment and admissions and in creating an inclusive environment that supports a diverse community. Although we can take pride in the steps we have taken, there is still much to be done and we will continue this important work over the coming year.

#### **(e) Fall Convocation**

Fall convocation is on November 8, 2018. Alumnus George Myhal, IndE 7T8, will be the guest speaker and will receive an honorary degree. As many know, George has been a strong supporter and contributor to our Faculty and university. In addition to mentoring our students and serving on a number of advisory boards and strategic planning initiatives over the years, George has more recently become a key benefactor of the Myhal Centre. Earlier this year, he was named a Member of the Order of Canada in recognition of his achievements as an investment and finance leader, and for his contributions to Canadian society.

The Engineering Alumni Association will once again host a breakfast in honour of our graduates, this year in the Myhal Centre featuring Professor Julie Audet, Vice-Dean, Graduate Studies. Convocation is an important milestone for our students and all are encouraged attend the ceremony.

The Speaker thanked Dean Amon for her report.

The Speaker noted that the following items will be considered by regular motions, requiring a simple majority of members present and voting to carry.

## **7. Minor in Artificial Intelligence Engineering**

Evan Bentz, Chair of the Undergraduate Curriculum Committee, presented Report 3598 Revised, a proposal to create a minor in Artificial Intelligence (AI) Engineering. This is an area of great interest in our Faculty. The minor will provide students in the Core 8 engineering programs and Engineering Science with expertise in machine learning and AI concepts that will allow them to access challenging and lucrative careers in this burgeoning field, and prepare them to pursue advanced research at the master's and the PhD levels. If approved, the minor will be effective January 2019, allowing fourth-year students to begin it and return after graduation to fulfill any outstanding program requirements.

The proposal included with Report 3598 Revised also supports an initiative to create a certificate in Artificial Intelligence Engineering, which will be discussed next in the agenda.

At the conclusion of the presentation, the following regular motion was moved and seconded –

THAT the Artificial Intelligence Engineering Minor, as described in the proposal attached to Report 3598 Revised, be established effective January 1, 2019, with students allowed to enroll at that time.

The following summarizes the questions and commentary on the motion.

Because of overlapping content, Engineering Science students taking the Machine Intelligence option will not be allowed to take the AI Engineering minor. For the same reason, students in the Robotics option must first get permission from the Division's chair to take the AI Engineering minor.

It was suggested that ethics and equity be integrated into the AI Engineering minor as a standalone course, as an indication of their importance.

The minor will be advertised through information sessions attended by its director, Professor Jason Anderson. Regarding demand, the Cross-Disciplinary Programs Office (CDPO) is available to discuss how the program will fit with students' schedules.



Undergraduate students are very supportive of the minor, as they are of the Machine Intelligence option, and they appreciate that graduating students will be able to enroll in the minor starting January 2019.

The following motion to amend was then moved and seconded –

THAT the proposal for an Artificial Intelligence Engineering Minor be amended to include MIE465: Analytics in Action as one of the electives in requirement #5.

There was no discussion and the motion to amend was carried.

The main motion returned to the floor, as amended:

THAT the Artificial Intelligence Engineering Minor, as described in the amended proposal attached to Report 3598 Revised, be established effective January 1, 2019, with students allowed to enroll at that time.

The motion was carried.

## **8. Certificate in Artificial Intelligence Engineering**

Evan Bentz, Chair of the Undergraduate Curriculum Committee, presented Report 3599 Revised, a proposal to create a certificate in Artificial Intelligence (AI) Engineering. He pointed out that while minors are comprised of six half courses (3.0 FCE), certificates are comprised of three half courses (1.5 FCE).

At the conclusion of the presentation, the following regular motion was moved and seconded –

THAT the Artificial Intelligence Engineering Certificate, as described in the amended proposal attached to Report 3599 Revised, be established effective January 1, 2019, with students allowed to enroll at that time.

A member asked if the certificate, with half the requirements of the minor, might dilute the rigour of a U of T program in this complex area. Professor Bentz replied that the certificate will provide additional breadth by allowing students to gain exposure to AI when their timetables will not allow them to take the minor. This will be the Faculty's eleventh certificate, and each provides recognition in a specialized area that distinguishes students within the engineering field.

The motion was carried.

## **9. Reports and Recommendations of Standing Committees**

The following report was approved by the Executive Committee of Faculty Council at its October 3, 2018 meeting and is being presented for Council's information.

**(a) Engineering Graduate Education Committee Update**

Julie Audet, Vice-Dean, Graduate Studies and Chair of the Engineering Graduate Education Committee, presented Report 3597 Revised. Minor curriculum changes include new APS, CHE, ECE, MIE and MSE courses, a course title change to APS1013, and the replacement of CHE2011 with CHE1102 to eliminate a redundancy for Chemical Engineering PhD students.

There were no questions and the report was received for information.

**10. Update from the Working Group to Review the Faculty's Constitution and Bylaws**

Doug Reeve, Speaker of Faculty Council and Chair of the Working Group to Review the Faculty's Constitution and Bylaws, updated Council on progress made by the working group to date.

The working group's mandate is to revise the constitution and bylaws to reflect the teaching-stream faculty appointment categories approved by Governing Council, and to establish delegated authority with respect to for-credit certificates. It will also present minor recommendations that will clarify and modernize the language used in these documents, such as removing the outdated requirement to publish meeting notices in the Faculty Gazette.

The working group has met six times since it was created by the Dean in July 2018 and will continue consulting with Council's constituent groups throughout November. It will provide an update at the December 2018 Council meeting, and bring forward recommendations for approval at the February 2019 Council meeting.

**11. Discussion Items**

The following items are for discussion purposes only.

**(a) Update from the Task Force on Mental Health**

Tom Coyle, Vice-Dean, Undergraduate, updated Council on the work of the Task Force on Mental Health since it presented its recommendations on mental health education, training and awareness, and the creation of an inclusive curriculum and pedagogy to Council in December 2016.

The task force will continue to implement its recommendations. These include circulating the Mental Health Syllabus Statement to instructors each term; promoting the Identify, Assist and Refer Online (IAR) Online Training to faculty, staff and students; collecting data from undergraduate students on access to resources and their perception of mental health support; monitoring demand for services provided by the Embedded Mental Health Counsellor; re-evaluating capacity with Health & Wellness; and coordinating and promoting Mindful Moments sessions for students, staff and faculty. In addition, the Assistant Director, Student Experience & Teaching Development will continue to liaise with the Engineering Society's Mental Wellness Director to develop and promote initiatives and resources, and the First Year Office will continue to organize annual SafeTalk training for orientation leaders.

During discussions, Professor Coyle noted that workload remains a source of anxiety for students, and said this can be ameliorated by spreading out major assignments and avoiding the scheduling of term tests and major assignments on the same day. Members also discussed the IAR Online Training program, which was designed to assist faculty in recognizing issues with students when they appear, and advertised in October. Professor Coyle also confirmed that the issue of substance abuse among students was not identified during the task force's meetings and consultations.

**(b) Update from Engineering Equity, Diversity and Inclusion Action Group**

Micah Stickel, Vice-Dean, First-Year Engineering; Chinmayee Gidwani, Equity & Inclusivity Director, Engineering Society; and Cori Hanson, Assistant Director, Student Experience & Teaching Development, updated Council on the work of the Engineering Equity, Diversity and Inclusion Action Group (EEDIAG).

The EEDIAG was formed organically to address unconscious bias in the practices of our Faculty. It will build upon the work of the university's Equity and Diversity in Research and Innovation Working Group, and the shared values of diversity, equity and inclusivity expressed by Dean Amon in her welcome message to our Engineering community in September.

The presenters discussed several EDI-related goals in our Faculty's 2017-2022 Academic Plan, and quoted statements about inclusivity from members of our Engineering community. Upcoming and ongoing initiatives of EEDIAG include maintaining the EDI webpage, providing unconscious bias training for chairs and directors and EDI training for first-time teaching assistants, launching the Towards Inclusive Practices Series (TIPS) for faculty, staff and students going on PEY, featuring EDI materials in Engineering Society's display cases, and including the concepts of equity, diversity and inclusion in several APS and ESC courses.

In order to encourage diversity and inclusivity while not singling out individual groups, EEDIAG acts as a connecting point for related work being done in the Faculty, such as the efforts of Admissions, the Black Inclusion Steering Committee, and the Engineering Indigenous Initiatives Steering Committee to increase awareness and pathways for students who would not normally consider engineering.

Ethics and equity were discussed at the October 21-23 CEAB accreditation visit as they are included in the CEAB's 12 graduate attributes. Our Faculty performed well on ethics, but it was noted by the reviewers that equity is essentially absent beyond first year. We may wish to address this by including equity in the curriculum in upper years.

Similar to the work of the Truth and Reconciliation Commission, our Faculty is in the "truth-finding" phase of EDI and in order to determine future actions, is seeking input from people who have not traditionally felt they have had a voice. The EEDIAG has also connected with similar groups in other Faculties, such as Medicine and Kinesiology & Physical Education, regarding their experiences. All are encouraged to attend monthly sessions hosted by EEDIAG to share experiences, voice concerns and discuss ideas for new initiatives, and Council members were asked to provide feedback by answering a series of questions posed by the action group.

Dean Amon pointed out that we are applying many of the strategies proven successful in increasing gender diversity, to other underrepresented groups. She thanked all involved for their efforts, and said that while more work needs to be done, we should acknowledge the positive outcomes that have been achieved so far.

**12. Other Business**

There was no other business.

**13. Date of Next Meeting**

The next Faculty Council meeting is on December 18, 2018.

**14. Adjournment**

The meeting was adjourned at 2:00 p.m.

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